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REMARKS

In the Office Action, claims 1-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,456,708 to Doan et al. in view of U.S. Patent No. 5,522,872 to Hoff.

In response thereto, claims 20 and 21 have been added. Accordingly, claims 1-21 are now pending. Following is a discussion of the patentability of each of the pending claims.

Independent Claim 1

Claim 1 recites an implantable lead (10) comprising a helical fixation element (28) extendable and retractable from a distal end of the lead. The distal end comprises an inner header part (34) comprising an electrically conductive material that is substantially transparent fluoroscopically, an outer header part (36) comprising an electrically insulating material, and a collar (38) attached to the distal end of the inner header part. The collar comprises a material that is substantially opaque fluoroscopically.

The Doan et al. reference discloses a lead (10) having a helix electrode (30) for piercing tissue to be stimulated (see Figure 1). A collar (30) is provided at the distal tip of the lead to facilitate fluoroscopic verification of the extension of the helix electrode relative to the lead tip during lead fixation. The collar is mounted within a recess (41) of an insulative header tube (24) adjacent the lead tip surface (26). The collar is electrically isolated and is secured to the header tube by means of a bonding agent such as a urethane adhesive.

The Doan et al. reference does not disclose or suggest a collar attached to a distal end of an inner header part that is an electrically conductive material. The Doan et al. reference discloses a collar (30) that is attached to a header tube (24) that is electrically insulative. According to the specification of the present application, electrical conductivity of the inner header part allows cardiac signals generated in cardiac tissue adjacent to the distal tip of the lead to be sensed for mapping localized heart activity.

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The Hoff reference discloses a lead having a sleeve (12) that joins a conductor (10) to an electrode (14 and 17). The conductor and electrode are inserted into passages formed through the sleeve and are bonded to the sleeve surface by laser welding. Nowhere does the Hoff reference disclose a collar attached to the distal end of an inner header part which is electrically conductive.

Accordingly, it is respectfully submitted that claim 1 is in condition for allowance.

Dependent Claims 2-6 and 20

Claims 2-6 and 20 depend from claim 1 and are similarly patentable. Accordingly, it is respectfully submitted that these claims are in condition for allowance.

Independent Claim 7

For at least the same reasons discussed above with regards to claim 1, it is respectfully submitted that claim 7 is in condition for allowance.

Dependent Claims 8-12 and 21

Claims 8-12 and 21 depend from claim 7 and are similarly patentable. Accordingly, it is respectfully submitted that these claims are in condition for allowance.

Independent Claim 13

For at least the same reasons discussed above with regards to claim 1, it is respectfully submitted that claim 13 is in condition for allowance.

Dependent Claims 14-19

Claims 14-19 depend from claim 13 and are similarly patentable. Accordingly, it is respectfully submitted that these claims are in condition for allowance.

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CONCLUSION

In light of the above claim amendments and remarks, it is respectfully submitted that the application is in condition for allowance, and an early notice of allowance is requested.

Respectfully submitted,

3/14/05

Date

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